

UtahAmerican Energy, Inc.



**COPY**

C/007/0013 Incoming  
Lila Canyon Project  
P. O. Box 910  
East Carbon, Utah 84501  
Phone: (435) 888-4000  
(435) 650-3157  
Fax: (435) 888-4002

#3705

OK

January 14, 2011

Daron Haddock  
Permit Supervisor  
1594 West North Temple, Suite 1210  
P.O. Box 145801  
Salt Lake City, Utah 84114-5801

Re: UtahAmerican Energy, Inc. Horse Canyon Mine, Clean Copies of 10-011 (Ventilation Breakouts) Horse Canyon Part B Lila Canyon ACT/009-013

Dear Mr. Haddock,

Conditional approval for submittal 10-010 was given on December 9, 2010. The clean copies were sent back on January 10, 2011. Attached you will find six (6) Clean copies of submittals 10-009 and 10-010. With the submittal of these clean copies final approval should be granted by DOGM.

C1 And C2 forms are included.

Thanks for your help.

Should you have any questions please call.

*R. J. Marshall*  
Sincerely,

File in:

☐ Confidential

☐ Shelf

☒ Expandable

Date Folder 01/18/2011 C/0070013

See: *Incoming* For additional

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JAN 18 2011

DIV. OF OIL, GAS & MINING

# APPLICATION FOR PERMIT PROCESSING

COPY

<input type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/007/013
Title of Proposal: Deficiencies for ventilation breakouts. 11-001 Clean copies						Mine: Horse Canyon
						Permittee: UtahAmerican Energy, Inc.

Description, include reason for application and timing required to implement:

**Instructions:** If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation

<input type="checkbox"/> Yes	<input type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres Disturbed Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input type="checkbox"/> No	2. Is the application submitted as a result of a Division Order? DO #
<input type="checkbox"/> Yes	<input type="checkbox"/> No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	4. Does application include operations in hydrologic basins other than as currently approved?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	6. Does the application require or include public notice/publication?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	9. Is the application submitted as a result of a Violation? NOV #
<input type="checkbox"/> Yes	<input type="checkbox"/> No	10. Is the application submitted as a result of other laws or regulations or policies? Explain:
<input type="checkbox"/> Yes	<input type="checkbox"/> No	11. Does the application affect the surface landowner or change the post mining land use?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
<input type="checkbox"/> Yes	<input type="checkbox"/> No	13. Does the application require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	15. Does application require or include soil removal, storage or placement?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does the application require or include construction, modification, or removal of surface facilities?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	18. Does the application require or include water monitoring, sediment or drainage control measures?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	19. Does the application require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	20. Does the application require or include subsidence control or monitoring?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	21. Have reclamation costs for bonding been provided for?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

**X Attach 6 complete copies of the application.**

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations herein.

*R. J. Marshall* 1/14/11 Project Mgr  
Signed - Name - Position - Date

scribed and sworn to before me this 14th day of January, 2011

*Linda Kerns*  
Notary Public  
My Commission Expires: March 27, 2013  
Attest: Utah  
COUNTY OF Carbon



Notary Public  
**LINDA KERNS**  
Commission #578211  
My Commission Expires  
March 27, 2013  
State of Utah

Received by Oil, Gas & Mining

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ASSIGNED TRACKING NUMBER

# Application for Permit Processing Detailed Schedule of Changes to the MRP

# COPY

Deficiencies response for ventilation breakouts. 11-001 (Clean Copies)

Permit Number: ACT/007/013

Mine: Horse Canyon

Permittee: UtahAmerican Energy, Inc.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 1 Plate 1-2
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 2 Text Pages 3, 10, 15, and 16.
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Plates 2-1, 2-2, and 2-3.
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 5 Text Pages 11, 12, and 63.
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 5 Plate 5-1A, 5-2, 5-6 and 5-9.
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 7 Text Pages 67, 68, and 75.
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 7 Appendix 7-4 Page 59
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 7 Plates 7-2, 7-5, and 7-7.
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Appendix 8-1 Page 1 (Bond Amount Summary Page)
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Appendix 8-1 Demolition Summary Page 1 (1 of 32)
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Appendix 8-1 Demolition Last Page (32 of 32)
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	
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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

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are present with the described permit area. This is due to the lack of a developed irrigation system on the arid soils present, as well as the high erodibility of soils present within the area. It has been determined that no alluvial valley floors are present on the proposed disturbed areas of the Lila Canyon Mine Project. This determination was made by the use of detailed soil surveys and site observations. Also, the order 3 intensity level soil survey by the National Resources Conservation Services shows no alluvial valley floors in the area. A copy of these negative determinations is included as Appendix 2-1.

## **222. Soil Survey.**

**222.100.** An order 3 intensity level soil survey for Emery County is currently in progress by the USDA, National Resources Conservation Service (NRCS). Soil mapping at a scale of 1:24,000, along with map unit descriptions, has been provided by NRCS to cover the entire Lila Canyon Mine project area. This soil map is presented as Plate 2-1. The detail is suitable for general planning and evaluation purposes over the mining project area.

Since more specific information was needed for the area to be disturbed at the proposed mine facilities site; a detailed soil survey was conducted by Daniel Larsen, Soil Scientist, Environmental Industrial Services in August 1998. Additional information was collected near the ventilation break outs on June 15, 1999. The detailed soil survey report is presented in Appendix 2-3. A soils map, soil descriptions, and laboratory soil testing data are included. The detailed soils map for the mine facilities site (disturbed area) is presented in Plate 2-2.

**222.200.** Soil types for the proposed project area are identified on Plate 2-1 and in Appendix 2-3. At the mine facilities site the dominant soil is the Strych series. The order 3 intensity soil survey information provided by the Natural Resources Conservation Service identifies four soil map units at the mine surface facilities site:

BNE2      Strych very bouldery, fine sandy loam, 3 to 20 percent slopes

BMD      Strych very stony fine sandy loam, 3 to 30

approximately 56,000 bank cubic yards. Removal of stones and boulders would be considered in volume estimates where they are part of the soil layer removed.

The stockpile has been sized to allow for bulking or swell of the soil as it is removed from the bank state to the loose state. A bulking number of 1.18 has been used. The area allowed for topsoil storage is 56,000 bank cubic yards x 1.18 which equals 66,000 loose cubic yards to be placed on the topsoil pile.

Boulders of approximately three feet in diameter and larger will be separated from the topsoil and piled or placed at appropriate locations such as adjacent to roads, pads etc. No attempt will be made to collect the large boulders into common piles. Boulders above ground level are in addition to topsoil volumes and may account for approximately 10,000 cubic yards.

UEI is not stockpiling large stones "boulders". Boulders will be pushed to the side and left during construction and then upon reclamation the boulders will be pushed back into the approximate location from which they came. Rocks of 36" or less will be stored in the topsoil pile with the soil and will be redistributed with the soil.

The approximate 66,000 loose cubic yards of topsoil will be stored in a topsoil pile as shown on Plate 5-2. This topsoil pile will be approximately 350' long and 250' wide with 2:1 slopes. The height of topsoil pile needed is approximately 31 feet. The pile as designed has the capability of storing well over the required 60,000 cubic yards. See Figure 1 for topsoil pile calculations.

Soil from the proposed ventilation break out sites near the coal outcrop will not be salvaged. As a result of the very limited ground disturbance, and lack of access, soil cannot reasonably be salvaged. At these small isolated sites soil will not be salvaged or stored.

The sequence for topsoil removal in general, would be starting from the lower elevations of the site and working up slope. Surface disturbance may not be required on all of the acreage



**232.720.** No substitute soil materials will be needed.

**233. Topsoil Substitutes and Supplements.**

**233.100.** Soil inventories indicate that no substitute topsoil material will be necessary. Available soil material on the site is adequate for reclamation purposes.

**233.200** Preliminary inventories show that no topsoil borrow area is needed.

**233.300.** This section is addressed in 233.400.

**233.310.** This section is addressed in 233.400.

**233.320.** This section is addressed in 233.400.

**233.330.** This section is addressed in 233.400.

**233.340.** This section is addressed in 233.400.

**233.400** Soil Inventories show that no topsoil or topsoil substitute borrow area will be needed. Adequate amounts of suitable soil for plant growth are present based on root distribution and soil characteristics.

**234. Topsoil Storage.**

**234.100.** It will not be possible to redistribute the topsoil immediately. Therefore, the topsoil will be stockpiled for the purpose of final reclamation of the mine site. The rock storage areas are shown on Plate 5-2.

Access to the ventilation break outs will be from inside the mine. There will be no surface disturbance with the breakouts

so no topsoil will be salvaged. Refer to the Surface Area map Plate 5-2 for the approximate location of the ventilation breakouts.

Presently there is not a subsoil stockpile required for this project, therefore, details are not provided.

- 234.200.** Section 232.100 contains information on the topsoil stockpile.
- 234.210.** The stockpile site selected is on the Strych soil. It is a well drained and stable site on cobbly alluvium.
- 234.220.** The stockpile will be located and protected to avoid contamination. Unacceptable compaction will not be permitted. In areas where undisturbed soils are in close proximity to coal mining or reclamation activities, "Undisturbed Area" signs will be placed at or near the contact between disturbed and undisturbed. Quarterly inspections will be made to insure there is not an accumulation of coal dust or coal related debris. In the event coal dust is observed, water sprays according to air quality permit (DAQE-702-99) or alternative measures such as wind fence, or broadening of the topsoil salvage area will be employed to control the coal dust and fines.
- 234.230.** The stockpile will be mulched and seeded with the seed mix presented in Table 3-4. Up to 1% by volume of the sifted soil crusts will be added to each load of Wood fiber mulch applied to the top soil pile. The slopes will have an irregular, pitted surface to help retain precipitation and minimize runoff. Silt fencing will be placed at the base of the stockpile.
- 234.240.** Plans are to leave the topsoil in place for the life of the mine.

The water treatment plant is located on the north-east side of the surface facility area. The plant will rest on a 15' by 15' slab. Process water will flow through the treatment plant at which time it will be treated and made suitable for potable water uses. The potable water will be stored in the potable water tank until it is used. The location of the water treatment plant can be found on Plate 5-2.

#### **Potable Water Tank**

Water treated by the water treatment plant and intended to be used as potable water will be stored in this 15' diameter by 20' high tank. The tank will set on a 15' by 15' concrete pad designed for adequate support of the tank. The location of the potable water tank can be found on Plate 5-2.

#### **Process Water Tank**

Process water, water to be used for mine use or to be treated for potable use, will be stored in this tank. The 15' diameter by 20' high process water tank will rest on a 15' by 15' concrete pad. Process water tank will be filled by using mine discharge water or may be hauled in from off site. The location of the process water tank can be found on Plate 5-2.

#### **Sewer Tank**

The sewer tank has been designed to facilitate 200 employees working on rotating shifts. The sewer tank will be located under the south end of the office and bathhouse parking area. The location of the sewer tank can be found on Plate 5-2. The design for the Sewer Tank can be found in Appendix 5-4.

#### **Drain Field**

The drain field has been designed to facilitate 200 employees working on rotating shifts. The drain field will be located at a lower elevation and south of the sewer tank. The location of the drain field can be found on Plate 5-2. The design for the drain field can be found in Appendix 5-4.

#### **Ventilation Fan**

The ventilation fan will be located on #0 Portal. The location of the portal and fan is shown on Plate 5-2.



**60-inch Conveyor from tunnels to Coal Stockpile(Main Conveyor)**

The Run of Mine underground belt will provide for a means for coal to be conveyed from the working faces to the run of mine coal storage pile on the surface. The belt will provide capacity to convey to the surface, all coal mined in the underground workings. Preliminary design suggests that the conveyor that extends from the bottom of the rock slopes to the stacking tube at the coal storage area, shown on Plates 5-2 and 5-8, will have the following specifications: 60" wide, speed approximately 700 fpm with a length of approximately 810 feet long. Since the ground beneath the conveyor will not be disturbed due to the steepness and remoteness of the area, this conveyor will be completely contained within a tube type structure.

**(ROM) Underground Belt from Stockpile to Crusher/ Screen**

The Reclaim conveyor will provide for a means for coal to be conveyed from the coal stockpile to the crusher. The belt will provide capacity to convey to the screen and crusher at a suitable rate for crushing and screening. Preliminary design suggests that the reclaim conveyor, shown on Plates 5-2 and 5-8, will have the following specifications: 60" wide, speed approximately 700 fpm with a length of approximately 670 feet long. The portions of the conveyor running on the surface will be covered.

**60-inch Conveyor from Crusher to Loadout Bin**

The Loadout conveyor will provide for a means for coal to be conveyed from the crusher to the loadout bin. The belt will provide capacity to convey to the loadout at the same rate as the Reclaim conveyor. Preliminary design suggests that the Loadout conveyor, shown on Plates 5-2 and 5-8, will have the following specifications: 60" wide, speed approximately 500 fpm with a length of approximately 230 feet long. The portions of the conveyor running on the surface will be covered.

**Drop from Loadout Bin to Truck Loadout**

Coal will be dropped from the loadout bin to the trucks being loaded. The drop rate will provide capacity to the trucks at a rate suitable for truck

- 553.** The operator will comply with all regulations applicable to underground mining activities relative to backfilling and grading as required by R645 regulations.

Some minor cut slopes along the reclaimed road may be left after reclamation due to the difficulty and inability to reclaim all material pushed over the side while making the road cut. See plate 5-7B-2 cross section 16+00 for details. UEI will make reasonable efforts to minimize the cut slopes being left.

- 553.100.** Disturbed Areas. Disturbed areas will be backfilled and graded to:

- 553.110** The operator will obtain a post mining topography similar in form as what existed premining.

- 553.120** Since Lila Canyon is an underground operation, no spoil piles will be created. Minor highwalls may be created with the development of the rock slope portals. Upon completion of mining these entries will be seal as per Closure for Mine Openings Appendix 5-6 and all highwalls will be eliminated during the reclamation phase of the operation. Plate 5-9 shows the proposed portal plan. During reclamation, suitable material will be placed against the portals. This material will be shaped to eliminate the highwall and to bring the slope back to the approximate original contour.

- 553.130** All fill slope will have a static safety factor of 1.3 as shown in Appendix 5-5.

- 553.140** Erosion and water pollution will be minimized on site by the use of drainage control structures (burms, channels and silt fence) and the use of small depression, soil tackifiers, mulch and sediment pond design. No water is anticipated leaving the reclaimed site prior to adequate treatment in the form of retention and/or filtration

made to enter these piezometers when the sites are accessible.

The water level of IPA-2 was very consistent with the last reading taken on April 29, 1996. This piezometer (IPA-2) is the farthest west of the three piezometers and is up dip from the other two. Any impact to ground water would be noticed very quickly at IPA-2. This information from IPA-2 along with the past baseline data on the three piezometers and the in mine water monitoring program mentioned above, would provide an accurate evaluation of potential ground water impacts.

At the present time, there are no plans to divert water from the underground workings of this operation to any other underground workings.

If it became necessary to discharge water from the mine, this water would be discharged in accordance with the UPDES permit application in Appendix 7-5. The water would be discharged into the Right Fork of Lila Canyon. Refer to Plate 7-5.

**731.520 Gravity Discharges** Location of the proposed portal slopes are below the western (upper) exposure of the easterly dipping coal bed. In the area immediately around the proposed portals, no water is presently issuing from the strata above or below the coal outcrop; therefore, it is assumed any water encountered in the underground mining will not be under artesian pressure or with sufficient hydrostatic head to raise it to the portal site.

The coal seam to be mined dips away from the portal site at approximately 10%. If water is encountered in the mining, it will likely be at a static level far below the exposed outcrop or rock slopes. This may result in some possible mine discharge from pumping, but not from gravity.

**731.521 Portal Location** The proposed access portals are below the coal outcrop, as shown on Figure 7-1, Plates 5-5 and 7-5. The ventilation breakout locations are shown on Plate 5-2. The rock slopes will slope up to the east at approximately 12% to contact the coal seam; however, the coal seam is dipping down to the east in this area. The approximate point

of contact between the rock slopes and the coal seam will be 1227' from the surface at an elevation of 6300'. Ground water levels in the mining area, based on the 3 water monitoring holes and other geologic data, appear to be nearly static at elevation 5990 in this area (see Figure 7-1).

Water level in the mine would have to raise approximately 310' to reach the rock slope/coal seam contact and result in a gravity discharge. Water monitoring results and other historical data in the area do not indicate this is likely to occur.

**731.522 Surface Entries after January 21, 1981** This is not known to be an acid-producing or iron-producing coal seam; however, proposed portals are located to prevent gravity discharge from the mine (see Section 731.521).

**731.600 Buffer Zones** All streams within the permit area are either ephemeral or intermittent by rule with ephemeral flow. In the area of the surface facilities along the intermittent by definition Lila Wash, the Operator will install stream buffer zone signs in locations shown on Plate 5-2 and maintain the buffer zones during the operation.

**731.700 Cross Sections and Maps** The following is a list of cross-sections and maps provided in this section of the P.A.P.

Plate 7-1	Permit Area Hydrology Map
Plate 7-2	Disturbed Area Hydrology/Watershed
Plate 7-3	Water Rights Locations
Plate 7-4	Water Monitoring Location Map
Plate 7-5	Proposed Sediment Control Map
Plate 7-6a	Proposed Sediment Pond #1
Plate 7-6b	Proposed Sediment Pond #2
Plate 7-7	Post-Mining Hydrology

**742.123** Undisturbed diversions will consist of properly designed and protected channels and/or culverts as described in Appendix 7-4.

**742.124** The primary means of velocity reduction is planned to be the use of rip-rap; however, other methods such as straw dikes, check dams and/or vegetative filters may be employed during the operational or reclamation phases as determined necessary, and with Diversion approval.

**742.125** There are no plans to treat runoff with chemicals. Based on extensive experience with runoff in this area, effluent requirements for discharge can normally be met by containment and settling in a sediment pond.

**742.126** It is expected that water will be encountered in the underground mining; however, this water will be used for mining needs and only discharged when no further storage is available underground. Any discharge of mine water will meet applicable effluent limitations. Such water will be sampled (and treated if necessary) prior to discharge.

**742.200 Siltation Structures** As described in Appendix 7-4 the sediment ponds will provide for sediment removal for most of the surface facility disturbance. An alternate sediment control method of berms and silt fences will be used at the ventilation breakouts, around the topsoil stockpile area, and on the slopes below the water treatment area and portal access road. The description of this alternate sediment control method is also described in Appendix 7-4. In the case of the ventilation breakouts, this is necessary due to its remote location and rough terrain. In the case of the water treatment slope, due to topography, there is no way to direct the runoff to the sediment basins. Other sediment structures that might be used around the surface facilities are temporary sediment traps such as straw dikes and/or catch basins.

**742.210 General Requirements** Siltation structures will be designed, constructed and maintained in accordance with the following regulations.

**742.211** Siltation structures will be constructed using the best technology currently available to prevent additional

## **Alternate Sediment Control for Fan Site and Topsoil Storage Area**

### **5.1 ASCA Areas**

Sediment Control at the slope below water treatment area, and topsoil storage area sites will be accomplished with a combination of one or more of the following: berms, silt fences, and straw bales.

The ventilation breakouts are just punch outs and will have insignificant disturbance associated with them. (Plate 5-2) However, they are addressed as ASCA's and are addressed here even though there will be only insignificant surface disturbance. The ASCA's will be seeded upon final reclamation.

The topsoil collected from the topsoil storage area sites will be located downslope from the sites and will be used in the construction of the berm. The berm will be constructed a minimum of two feet high and have 2:1 side slopes. The berm will control the flow from a 10 year-24 hour precipitation event. Silt fence will be selectively placed to help control run-off. The berm will be stabilized with vegetation to prevent erosion. As much as practical, the vegetation techniques used on the main topsoil pile will be utilized on the fan topsoil berm.

The outside of the berm will be protected with a silt fence or gravel. The gravel, if used, would help augment the revegetation. Construction details of the silt fence/filter fence are shown in Figure 5.

The outslope of the portal access road, outslope of the water treatment pad, and ventilation break outs will have a silt fence located along the disturbed area boundary to treat the runoff from the slope. While some portions of this area will be disturbed as a result of the fill material placed for the pad and road construction, the major portion of this area is expected to remain undisturbed. As an added protection, the portions of the area that are disturbed by the fill placement will be covered with an erosion control mat to minimize the erosion from this slope and that area seeded to aid in the establishment of a vegetative cover.

Due to lack of final engineering details, the exact location of the berms, silt fences, and subsequent erosion techniques will be determined in field with the approval of UDOGM. The final determination will be made prior to the start of topsoil removal.

### **Run-off Calculations**

#### **5.2 Ventilation Break Outs**

Insignificant surface disturbance.

#### **5.3 Topsoil Storage Area**

Bonding Calculations  
Horse Canyon MineC/007/013  
Lila Canyon Section

Bond Summary

Direct Costs

Subtotal Demolition and Removal	\$657,751.00
Subtotal Backfilling and Grading	\$417,838.00
Subtotal Revegetation	\$340,586.00
Direct Costs	\$1,416,175.00

Indirect Costs

Mob/Demob	\$141,618.00	10.0%
Contingency	\$70,809.00	5.0%
Engineering Redesign	\$35,404.00	2.5%
Main Office Expense	\$96,300.00	6.8%
Project Mainagement Fee	\$35,404.00	2.5%
Subtotal Indirect Costs	\$379,535.00	26.8%

Total Cost	\$1,795,710.00
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Escalation factor	0.005
Number of years	3
Escalation	\$27,071.00

Reclamation Cost	\$1,822,781.00
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Bond Amount (rounded to nearest \$1,000) 2013 Dollars	\$1,823,000.00
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Bond Posted Up to December 2010	\$1,807,000.00
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Difference Between Cost Estimate and Bond	-\$16,000.00
Percent Difference	-0.88%



[illegible]

[illegible]

approximately 56,000 bank cubic yards. Removal of stones and boulders would be considered in volume estimates where they are part of the soil layer removed.

The stockpile has been sized to allow for bulking or swell of the soil as it is removed from the bank state to the loose state. A bulking number of 1.18 has been used. The area allowed for topsoil storage is 56,000 bank cubic yards x 1.18 which equals 66,000 loose cubic yards to be placed on the topsoil pile.

Boulders of approximately three feet in diameter and larger will be separated from the topsoil and piled or placed at appropriate locations such as adjacent to roads, pads etc. No attempt will be made to collect the large boulders into common piles. Boulders above ground level are in addition to topsoil volumes and may account for approximately 10,000 cubic yards.

UEI is not stockpiling large stones "boulders". Boulders will be pushed to the side and left during construction and then upon reclamation the boulders will be pushed back into the approximate location from which they came. Rocks of 36" or less will be stored in the topsoil pile with the soil and will be redistributed with the soil.

The approximate 66,000 loose cubic yards of topsoil will be stored in a topsoil pile as shown on Plate 5-2. This topsoil pile will be approximately 350' long and 250' wide with 2:1 slopes. The height of topsoil pile needed is approximately 31 feet. The pile as designed has the capability of storing well over the required 60,000 cubic yards. See Figure 1 for topsoil pile calculations.

Soil from the proposed ventilation break out sites near the coal outcrop will not be salvaged. As a result of the very limited ground disturbance, and lack of access, soil cannot reasonably be salvaged. At these small isolated sites soil will not be salvaged or stored.

The sequence for topsoil removal in general, would be starting from the lower elevations of the site and working up slope. Surface disturbance may not be required on all of the acreage